

### **ABSTRACT OF THE DISCLOSURE**

A high temperature fuel cell generator (10) having a housing (12) containing a top air feed plenum (80), a bottom fuel inlet (54), a fuel reaction generator chamber (62) containing fuel cells (42) and a reacted fuel-reacted air combustion chamber (38) above the fuel reaction generator chamber (62), where inlet air (14) can be heated internally within the housing in at least one interior heat transfer zone/block (92) located between the reacted fuel-reacted air combustion chamber (38) and the air feed plenum (80).